UK Data Service

Grant Number: N/A

Sponsor: European Regional Development Fund; Centrica PLC

Project title: Cornwall LEM Residential Electricity Dataset with Solar Production and Battery Storage

The following files have been archived:

ITEM	FILE NAME	FILE DESCRIPTION
1	"LEM Residential Technical Executive Summary.pdf"	Executive summary report.
2	"LEM Residential Data Dictionary PUBLIC.pdf"	Description of all data, sample rates, compressed and uncompressed (N.B. '7zip' can be used to extract bz2) file sizes, tables of field names, data coverage heatmaps.
3	"App & Meter Guidance for Cornwall LEM Residential Project Participants.pdf"	This document provided guidance to the participant households.
4	"LEM Residential MetaData Summary Report.pdf"	This report provides an expanded discussion on "LEM Resi MetaData Tables.xlsx", and how this data relates to the measurement timeseries (results).
5	"LEM Residential Metadata Summary Appendix B Correlation Plots.pdf"	Appendix for "LEM Residential MetaData Summary Report.pdf".
6	"LEM Residential Fleet Self-Consumption Summary Report.pdf"	This report reviews the performance of the PV techno-economics, both with and without the battery system, also with respect to a baseline case (no PV or batt.). Expanded discussion on household consumption is also provided.
7	"LEM Residential BESS Utilisation Summary Report.pdf"	This report provides an expanded discussion on the battery energy storage system (BESS) preformance, including: breakdown of the different BESS type/size; round-trip efficiency; utilisation; headroom assessment (capacity for arbitrage revenue); re-sizing economics; community-scale alternatives; and CO_2 savings.

ITEM (CONT)	File name	File description
8	"LEM Resi MetaData Tables.xlsx"	Refer to Data Dictionary and MetaData Summary Report. 100 residential dwellings, one row per dwelling. Anonymised household survey responses relating to energy bills, approx. household composition, income band, heat source, household tech. ownership. Also includes technical survey, solar evaluation, and a selection of EPC results.
9	"t_sites.csv"	Refer to Data Dictionary. 100 residential dwellings, one row per dwelling describing all sites referred to in all other data tables. Includes domestic battery type/size/power rating, PV capacity, postcode sector (excluding final two digits) and known major household equipment.
10	"t_weatherforecasts.csv.bz2"	Refer to Data Dictionary. Sonnen Weather Forecasts timeseries table, including precip., wind and solar measurements. Δt=60minute.
11	"t_prodconsforecasts.csv.bz2"	Refer to Data Dictionary. Sonnen timeseries forecasts for production and consumption. Δt=15minute.
12	"t_msb1m.csv.bz2"	Refer to Data Dictionary. Timeseries measurements from the MySonnenBatterie portal. Includes: battery charge & discharge, production & consumption, grid imports & exports, PV-batt charge, PV self-consumption (all Watt-hour), batt. state of charge (%SoC). Δt=1minute.
13	"t_ims1m.csv.bz2"	Refer to Data Dictionary. Independent monitoring system timeseries. Including: gird import & export, batt charge & discharge, PV gen. and standby loads, major loads (all Watt-hour), grid/batt./PV/major load active power (V), grid voltage (mV), grid freq. (%), grid PF (10e-3). Δt=1minute.
14	"t_ims1s.csv.bz2"	Refer to Data Dictionary. As "t_ims1m.csv.bz2", at Δt=1second.
15	"LEM Resi Data Coverage PUBLIC.xlsx"	Tables of data counts, by table, by day and by site.